

## CLAIMS:

1. A signal processing system (200) comprising:  
a source (210) configured to output a signal;  
5        a controller (230) configured to output a control signal to change levels of said signal; and  
an adjustor (240) configured to change levels of said signal to form an adjusted signal in response to said control signal;  
wherein said controller (230) forms said control signal in response to said signal,  
10      said adjusted signal and a reference signal.
  
2. The signal processing system (200) of claim 1, wherein said controller (230) is configured to receive a further signal to activate or deactivate said controller (230).
  
- 15        3. The signal processing system (200) of claim 1, wherein said controller (230) is configured to compare said signal and said adjusted signal with said reference signal in order to form said control signal.
  
- 20        4. The signal processing system (200) of claim 1, wherein said controller (230) is configured to output said control signal to lower a level of said signal when at least one of said signal and said adjusted signal is greater than said reference signal.
  
- 25        5. The signal processing system (200) of claim 1, wherein said controller (230) is configured to output said control signal to lower a level of said signal when at least one of said signal and said adjusted signal is greater than said reference signal by a predetermined amount.
  
- 30        6. The signal processing system (200) of claim 1, wherein said controller (230) is configured to output said control signal to increase a level of said signal when at least one of said signal and said adjusted signal is less than said reference signal by a predetermined amount.

7. The signal processing system (200) of claim 1, wherein said controller (230) is configured to output said control signal to change a level of said signal when at least one of said signal and said adjusted signal is different from said reference signal by a predetermined amount.

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8. The signal processing system (200) of claim 1, wherein said controller (230) is configured to output said control signal to lower a level of said signal when both said signal and said adjusted signal are greater than said reference signal.

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9. The signal processing system (200) of claim 1, wherein said controller (230) is configured to output said control signal to increase a level of said signal when both said signal and said adjusted signal are less than said reference signal.

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10. The signal processing system (200) of claim 1, wherein said controller (230) is configured to output said control signal to change a level of said signal when both said signal and said adjusted signal are different than said reference signal.

11. The signal processing system (200) of claim 1, wherein said reference signal is set by a user.

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12. The signal processing system of claim 1, wherein said reference signal is a level of sound set by a user or measured by a detector.

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13. A device (100) including an automatic volume control system (200), said automatic volume control system (200) comprising:

a controller (230) configured to output a control signal to change levels of an input signal; and

an adjustor (240) configured to change levels of said input signal to form an adjusted signal in response to said control signal;

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wherein said controller (230) forms said control signal in response to said input signal, said adjusted signal and a reference signal; said adjustor limiting a level of said

adjusted signal when levels of said input signal and/or said adjusted signal exceed said reference signal.

14. The device (100) of claim 13, wherein said controller (230) is configured to  
5 receive a further signal to activate or deactivate said controller.

15. The device (100) of claim 13, wherein said controller (230) is configured to compare said input signal and said adjusted signal to said reference signal in order to form said control signal.

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16. The device (100) of claim 13, wherein said controller (230) is configured to output said control signal to change a level of said input signal when at least one of said input signal and said adjusted signal is different from said reference signal by a predetermined amount.

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17. The device (100) of claim 13, wherein said controller (230) is configured to output said control signal to change a level of said input signal when both said input signal and said adjusted signal are different than said reference signal.

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18. A method of maintaining a level of an input signal comprising:  
providing said input signal to a controller (230) and a level adjuster (240);  
forming a control signal (235) by a said controller (230) to change levels of said input signal; and  
adjusting said input signal by said level adjuster in response said control signal to  
25 from an adjusted signal (245);  
wherein said controller (230) forms said control signal (235) in response to said input signal, said adjusted signal and a reference signal.

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19. A method of claim 18, wherein said adjusting act limits levels of said input signal by said level adjustor when levels of said input signal and/or levels said adjusted signal exceed said reference signal.

20. A system (200) for maintaining a level of an input signal comprising:  
control means (230) for forming a control signal (235) to change levels of said  
input signal; and  
adjusting means (240) for adjusting said input signal in response said control signal  
5 (235) to from an adjusted signal (245);  
wherein said control means (230) forms said control signal (235) in response to  
said input signal, said adjusted signal and a reference signal.